

PCT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 23 June 2000 (23.06.00)	Applicant's or agent's file reference BOR 12 PCT
International application No. PCT/FI99/00941	Priority date (day/month/year) 12 November 1998 (12.11.98)
International filing date (day/month/year) 12 November 1999 (12.11.99)	
Applicant KIVELÄ, Jouni et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

29 May 2000 (29.05.00)

☐ in a notice effecting later election filed with the International Bureau on:
2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer F. Baechler Telephone No.: (41-22) 338.83.38
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Copy for the Elected Office (EO/US)
 PATENT COOPERATION TREATY

PCT/FI99/00941

PCT

NOTIFICATION OF THE RECORDING
 OF A CHANGE

(PCT Rule 92bis.1 and
 Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

SEPPO LAINE OY
 Itämerenkatu 3 B
 FIN-00180 Helsinki
 FINLANDE

RECEIVED
 JUL 20 2001
 TC 1700

Date of mailing (day/month/year) 13 juin 2001 (13.06.01)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference BOR 12 PCT	
International application No. PCT/FI99/00941	International filing date (day/month/year) 12 novembre 1999 (12.11.99)

1. The following indications appeared on record concerning:

☒ the applicant ☒ the inventor ☐ the agent ☐ the common representative

Name and Address

KIVELÄ, Jouni
 Sturenkatu 37-41 A 3
 FIN-00550 Helsinki
 Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☒ the address ☐ the nationality ☐ the residence

Name and Address

KIVELÄ, Jouni
 Pellavapolku 3 D 37
 FIN-06450 Porvoo
 Finland

State of Nationality

State of Residence

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Authorized officer

J. Leitaio

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents, Box PCT
United States Patent and Trademark Office
Washington, D.C. 20231
www.uspto.gov

U.S. APPLICATION NO.	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
09/831600	KIVELA	J 0365-0501P
INTERNATIONAL APPLICATION NO.		
PCT/FI99/00941		
I.A. FILING DATE	PRIORITY DATE	
11 MAY 01	12 NOV 98	
DATE MAILED: 13 JUN 2001		

NOTIFICATION OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C. 371
AND 37 CFR 1.494 OR 1.495

1. The applicant is hereby advised that the United States Patent and Trademark Office in its capacity as Designated Office (37 CFR 1.494), ☒ an Elected Office (37 CFR 1.495), has determined that the above-identified international application has met the requirements of 35 U.S.C. 371, and is **ACCEPTED** for national patentability examination in the United States Patent and Trademark Office.

2. The United States Application Number assigned to the application is shown above and the relevant dates are:

11 MAY 2001	11 MAY 2001
DATE OF RECEIPT OF	DATE OF RECEIPT OF ALL
35 U.S.C. 371(c)(1), (c)(2) and (c)(4) REQUIREMENTS	35 U.S.C. 371 REQUIREMENTS

A Filing Receipt (PTO-103X) will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN ABOVE.** The filing date of the above-identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363). Once the Filing Receipt has been received, send all correspondence to the Group Art Unit designated thereon.

3. ☒ A request for immediate examination under 35 U.S.C. 371(f) was received on 11 MAY 2001 and the application will be examined in turn.

4. The following items have been received:

- ☒ U.S. Basic National Fee.
- ☒ Copy of the international application.
- ☐ Translation of the international application into English.
- ☒ Oath or Declaration of inventor(s).
- ☐ Copy of Article 19 amendments. ☐ Translation of Article 19 amendments into English.
The Article 19 amendments ☐ have ☐ not been entered.
- ☒ The International Preliminary Examination Report in English and its Annexes, if any.
- ☐ Copy of the Annexes to the International Preliminary Examination Report (IPER).
☐ Translation of Annexes to the IPER into English.
The Annexes ☐ have ☐ not been entered.
- ☒ Preliminary amendment(s) filed 11 MAY 2001 and _____.
- ☒ Information Disclosure Statement(s) filed 11 MAY 2001 and _____.
- ☒ Assignment document.
- ☐ Power of Attorney and/or Change of Address.
- ☐ Substitute specification filed _____.
- ☐ Indication of Small Entity Status.
- ☒ Priority Document.
- ☒ Copy of the International Search Report ☒ and copies of the references cited therein.
- ☐ Other:

REVIEWED BY
DOCKETING
gjk 6/18/01

Applicant is reminded that any communication to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5).

Shakeel Ahmed

Telephone: 703-305-3659



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C08F 2/34, B01J 8/24	A1	(11) International Publication Number: WO 00/29452 (43) International Publication Date: 25 May 2000 (25.05.00)
(21) International Application Number: PCT/FI99/00941 (22) International Filing Date: 12 November 1999 (12.11.99) (30) Priority Data: 982456 12 November 1998 (12.11.98) FI (71) Applicant (for all designated States except US): BOREALIS POLYMERS OY [FI/FI]; P.O. Box 330, FIN-06101 Porvoo (FI). (72) Inventors; and (75) Inventors/Applicants (for US only): KIVELÄ, Jouni [FI/FI]; Sturenkatu 37-41 A 3, FIN-00550 Helsinki (FI). NYFORS, Klaus [FI/FI]; Kullervontie 12, FIN-06150 Porvoo (FI). (74) Agent: SEPPO LAINE OY; Itämerenkatu 3 B, FIN-00180 Helsinki (FI).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: METHOD AND APPARATUS FOR DISCHARGING POLYMERIZATION REACTORS (57) Abstract A method and an apparatus of discharging polymer from a continuously operated gas phase reactor, wherein at least one monomer is polymerized in a bed containing active catalyst formed by catalyst and polymer particles suspended in a fluid, the bed defining a fluidized bed level in said reactor. The invention comprises continuously withdrawing polymer powder from the reactor, and adjusting the discharge rate of the polymer powder so as to maintain a constant bed level during polymerization. By means of the invention the discharge of the polymer can be made truly continuous without any disturbance of the polymerization. The rate of withdrawn polymer can be flexibly adjusted depending on the progress of the polymerization and it can also easily be scaled up if the capacity of the reactor is increased.		

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

To:

SEPPO LAINE OY
Itämerenkatu 3b
FI-00180 Helsinki
FINLANDE

Date of mailing
(day/month/year) 27.07.2000

Applicant's or agent's file reference
BOR 12 PCT

IMPORTANT NOTIFICATION

International application No.
PCT/FI99/00941

International filing date (day/month/year)
12/11/1999

Priority date (day/month/year)
12/11/1998

Applicant
BOREALIS POLYMERS OY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Le Bolloch, C

Tel. +49 89 2399-8091



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BOR 12 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FI99/00941	International filing date (day/month/year) 12/11/1999	Priority date (day/month/year) 12/11/1998
International Patent Classification (IPC) or national classification and IPC C08F2/34		
Applicant BOREALIS POLYMERS OY et al.		


1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 29/05/2000	Date of completion of this report 27.07.2000
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Lux, R Telephone No. +49 89 2399 8593



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/FI99/00941

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-12 as originally filed

Claims, No.:

1-28 as originally filed

Drawings, sheets:

1/2, 2/2 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/FI99/00941

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-28
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-28
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-28
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Methods (and the corresponding apparatus) of producing a polymer in a continuously operated gas phase reactor wherein the polymer powder is withdrawn continuously from the reactor at such a rate that the fluidized bed is maintained at a constant level are well known in the art (see col. 19 lines 10-13 of US-A- 5 834 571 or page 17 lines 26-29 of EP-A-0 024 933).

However, these documents as well as EP-A-0 870 539 do not disclose or suggest the entirety of features of present independent claims 1 and 26. In particular, these documents are silent as to a withdrawal of particle agglomerates from the reactor and a separate recovery thereof as well as to the corresponding apparatus features (collecting vessel with a screen for collecting the lumps and a separate discharge nozzle for the lumps) necessary for these additional method features.

This novel method and the corresponding apparatus eliminates several disadvantages associated with conventional technology (cf. page 2 line 30 to page 3 line 14). In addition, the following advantages of the present method/apparatus are noteworthy:

- the discharge of the polymer can be made truly continuous without any disturbance of the polymerisation,
- the rate of withdrawn polymer can be flexibly adjusted,
- the polymerisation can easily be scaled up, and
- considerable increase of the throughput (see Example and Comparative Example).

For these reasons, the subject-matter of present claims 1-28 is both novel (Art. 33 (2) PCT) and inventive (Art. 33 (3) PCT).

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference BOR 12 PCT	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/FI 99/00941	International filing date (day/month/year) 12/11/1999	(Earliest) Priority Date (day/month/year) 12/11/1998
Applicant BOREALIS POLYMERS OY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.
☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT 99/00941

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 C08F2/34 B01J8/24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 IPC 7 C08F B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 870 539 A (MITSUI CHEMICALS INC) 14 October 1998 (1998-10-14) column 3, line 34 - line 38 column 8, line 19 - line 52 ---	1-30
X	US 5 834 571 A (SCAROLA LEONARD SEBASTIAN ET AL) 10 November 1998 (1998-11-10) column 4, line 15 - line 16 column 19, line 10 - line 13; claims ---	1-4, 14, 15, 28-30
X	EP 0 024 933 A (MITSUI PETROCHEMICAL IND) 11 March 1981 (1981-03-11) page 17, line 26 - line 28 ---	1
A	EP 0 245 043 A (BP CHEM INT LTD) 11 November 1987 (1987-11-11) page 7, line 17 - line 24 --- -/-	1-30

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

2 March 2000

Date of mailing of the international search report

31. 03. 2000

Name and mailing address of the ISA
 European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Helena Danielsson

INTERNATIONAL SEARCH REPORT

International Application No

PCT 99/00941

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 326 835 A (AHVENAINEN ANTERO ET AL) 5 July 1994 (1994-07-05) column 6, line 5 - line 8 -----</p>	1-30

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT 99/00941

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0870539	A	14-10-1998	JP 10279611 A CA 2234510 A CN 1203120 A	20-10-1998 10-10-1998 30-12-1998

US 5834571	A	10-11-1998	US 5453471 A AT 184886 T AU 691957 B AU 3211395 A AU 687604 B AU 3211495 A AU 692586 B AU 3237395 A BR 9503534 A BR 9508515 A BR 9508517 A CA 2155236 A,C CA 2196664 A CN 1133298 A CN 1158624 A CN 1171793 A CZ 9700296 A CZ 9700297 A CZ 9700320 A DE 69512421 D EP 0697421 A EP 0773964 A EP 0773963 A EP 0773965 A EP 0856531 A EP 0856530 A FI 970457 A HU 78022 A HU 78018 A HU 76682 A JP 8100009 A JP 10503799 T JP 10503800 T NO 970464 A PL 318524 A PL 318526 A PL 318527 A SK 14897 A WO 9604322 A WO 9604323 A WO 9604321 A ZA 9506456 A	26-09-1995 15-10-1999 28-05-1998 04-03-1996 26-02-1998 04-03-1996 11-06-1998 04-03-1996 16-04-1996 21-10-1997 21-10-1997 03-02-1996 15-02-1996 16-10-1996 03-09-1997 28-01-1998 11-06-1997 11-06-1997 11-06-1997 28-10-1999 21-02-1996 21-05-1997 21-05-1997 21-05-1997 05-08-1998 05-08-1998 18-04-1997 28-05-1999 28-05-1999 28-10-1997 16-04-1996 07-04-1998 07-04-1998 21-03-1997 23-06-1997 23-06-1997 23-06-1997 10-09-1997 15-02-1996 15-02-1996 15-02-1996 14-03-1996

EP 0024933	A	11-03-1981	JP 1550529 C JP 56034709 A JP 63024001 B AT 7793 T CA 1140699 A	23-03-1990 07-04-1981 19-05-1988 15-06-1984 01-02-1983

EP 0245043	A	11-11-1987	FR 2598350 A CA 1287463 A JP 63022805 A US 4820463 A US 4921678 A	13-11-1987 13-08-1991 30-01-1988 11-04-1989 01-05-1990

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 99/00941

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5326835 A	05-07-1994	FI 906428 A	29-06-1992
		AT 130316 T	15-12-1995
		DE 69114696 D	21-12-1995
		DE 69114696 T	11-04-1996
		DK 517868 T	18-03-1996
		EP 0517868 A	16-12-1992
		ES 2079844 T	16-01-1996
		WO 9212182 A	23-07-1992
		GR 3018786 T	30-04-1996
		JP 2529923 B	04-09-1996
		JP 5504786 T	22-07-1993
		NO 179286 B	03-06-1996

PCT REQUEST

Original (for SUBMISSION) - printed on 12.11.1999 01:21:58 PM

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4 0-4-1	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.90 (updated 15.10.1999)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	National Board of Patents and Registration (Finland) (RO/FI)
0-7	Applicant's or agent's file reference	BOR 12 PCT
I	Title of invention	METHOD AND APPARATUS FOR DISCHARGING POLYMERIZATION REACTORS
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	BOREALIS POLYMERS OY
II-5	Address:	P.O. Box 330 FIN-06101 Porvoo Finland
II-6	State of nationality	FI
II-7	State of residence	FI
II-8	Telephone No.	358-19-5413416
II-9	Facsimile No.	358-19-5417798
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	KIVELÄ, Jouni
III-1-5	Address:	Sturenkatu 37-41 A 3 FIN-00550 Helsinki Finland
III-1-6	State of nationality	FI
III-1-7	State of residence	FI

PCT REQUEST

Original (for SUBMISSION) - printed on 12.11.1999 01:21:58 PM

III-2	Applicant and/or inventor	applicant and inventor US only NYFORS, Klaus Kullervontie 12 FIN-06150 Porvoo Finland FI FI
III-2-1	This person is:	
III-2-2	Applicant for	
III-2-4	Name (LAST, First)	
III-2-5	Address:	
III-2-6	State of nationality	
III-2-7	State of residence	
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent SEPPO LAINE OY Itämerenkatu 3 B FIN-00180 Helsinki Finland +358-9-68 59 560 +358-9-68 595 610 seppo.laine@selpat.fi
IV-1-1	Name	
IV-1-2	Address:	
IV-1-3	Telephone No.	
IV-1-4	Facsimile No.	
IV-1-5	e-mail	
V	Designation of States	AP: GH GM KE LS MW SD SL SZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT (except TZ) EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	

PCT REQUEST

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V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.	
V-6	Exclusion(s) from precautionary designations	NONE
VI-1	Priority claim of earlier national application	
VI-1-1	Filing date	12 November 1998 (12.11.1998)
VI-1-2	Number	982456
VI-1-3	Country	FI
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI - 1
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)
VIII	Check list	number of sheets electronic file(s) attached
VIII-1	Request	4 -
VIII-2	Description	12 -
VIII-3	Claims	4 -
VIII-4	Abstract	1 bor12pct.txt
VIII-5	Drawings	2 -
VIII-7	TOTAL	23
	Accompanying items	paper document(s) attached electronic file(s) attached
VIII-8	Fee calculation sheet	✓ -
VIII-9	Separate signed power of attorney	✓ -
VIII-16	PCT-EASY diskette	- diskette
VIII-18	Figure of the drawings which should accompany the abstract	
VIII-19	Language of filing of the international application	English
IX-1	Signature of applicant or agent	
IX-1-1	Name	SEPPO LAINE OY
IX-1-2	Name of signatory	Christoffer Sundman

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10-1	Date of actual receipt of the purported international application
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10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

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11-1	Date of receipt of the record copy by the International Bureau	
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